REMARKS

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the amendment and remarks herewith, which place the application into condition for allowance.

Claims 1, 3-5, 8, 10-15 and 17-32 are pending. Claims 1, 10, 14, 15, 19, 24, 25, 28, 29 and 32 are amended and claims 3 and 25 are cancelled, without prejudice. Support for the amended recitations in the claims is found throughout the specification. Claim 3 is cancelled as being redundant.

It is submitted that these claims, as originally presented, were patentably distinct over the prior art cited by the Examiner, and that these claims were in full compliance with the requirements of 35 U.S.C. § 112. Changes to the claims, as presented herein, are not made for the purpose of patentability within the meaning of 35 U.S.C. sections 101, 102, 103 or 112. Rather, these changes are submitted simply for clarification and to round out the scope of protection to which Applicants are entitled.

Claims 1, 3, 5, 8, 10-15 and 17-32 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over WO 95/24172 (WO '172) in combination with WO 89/07959 (WO '759 patent); claim 4 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over WO 95/24172 in combination with WO 89/07959 in view of Wick et al., U.S. Patent No. 5,679,373; and claim 32 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over WO 95/24172 in combination with WO 89/07959 in view of Place et al., U.S. Patent No. 5,242,391. These rejections are respectfully traversed.

Applicants submit that independent claim 1 is patentable over WO '172 and WO '959. Applicants' invention as recited in claim 1 is directed toward a transdermal system. The system comprising "a) a cover layer, b) an active-ingredient containing polymer layer, c) optionally

active-ingredient-containing adhesive layers, and d) a protective layer . . . wherein the at least one active ingredient is adapted to be delivered in a surge upon the breakdown of the polymer layer. (Emphasis added). Supporting disclosure can be found at, for example, page 4, lines 24-27. An example of an active agent utilized by the present invention is nitroglycerine. (Claim 29). Nitroglycerine requires variable blood concentrations during an application period. Specifically, when supplied continuously, nitroglycerine leads after a few hours to a loss in efficacy as a result of tolerance being developed. (Page 3, lines 9-12).

The present invention solves this problem. After the transdermal patch of the present invention is applied to the skin, the water soluble polymer is etched or dissolved by moisture on the skin, which breaks down the initial structure of the system. (Page 4, lines 24-26; Page 5, lines 14-15.) As the polymer layer breaks down, the active ingredient is delivered in a surge or surge-like. (Page 4, lines 26-27; Page 5, lines 2-5). Thus, the delivery profile of the transdermal patch is not constant.

Neither WO '172 nor WO '959 discloses, suggests or teaches a transdermal system wherein the active ingredient is adapted to be delivered in a surge upon the breakdown of the polymer layer. Accordingly, Applicants believe that claim 1 is patentable over WO '172 or WO '759—taken either alone or in combination—on at least this basis. Further, as mentioned in Applicants Amendment dated October 25, 2002, which is incorporated by reference, WO '172, alone or in combination with the secondary references, fail to provide the necessary incentive or motivation to modify the reference teachings in order to arrive at the present invention. There is no suggestion or motivation in any of the references that would lead a skilled artisan to practice the instantly claimed invention, especially where the active ingredient is adapted to be delivered in a surge upon the breakdown of the polymer layer.

WO '172 relates to a system that is compatible with volatile or heat sensitive drugs, enhancers or other components. WO '172 provides that the proximal adhesive layer (20) is rate limiting if the drug is more soluble in the distal adhesive layer (19). (WO '172 at page 17, lines 14-20). Further, if the drug is more soluble in the proximal adhesive layer (20), a quick release may be followed by a sustained release. (WO '172 at page 17, lines 23-29). But, the delivery of the active ingredient is maintained until the drug delivery device is removed. Thus, WO '172 does not disclose, suggest, or teach an active ingredient that is adapted to be delivered in a surge upon the breakdown of a polymer layer.

WO '959 relates to an occlusive body patch for transdermal administration of an active agent and the use of a microporous polymer in the active layer in which the rate of delivery of the active substance is nearly constant. (WO '959 at page 5, line 38- page 6, line 7; page 6, lines 8-12). Thus, WO '959 does not disclose, suggest, or teach an active ingredient that is adapted to be delivered in a surge upon the breakdown of a polymer layer.

Claims 3, 5, 8, 10-15 and 17-32 depend on claim 1. Since claim 1 is believed to be patentable over the cited references, claims 3, 5, 8, 10-15 and 17-32 is believed to be patentable over the cited references on the basis of its dependency on claim 1.

Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over WO '172 and WO '959 in view of Wick et al., U.S. Patent No. 5,679,373. Wick is relied upon solely to meet the present invention water-soluble polymer limitation. However, since dependent claim 4 inherits the limitations of independent claim 1, the rejection based on the additional reference to Wick should be withdrawn in view of the foregoing discussion.

Further, Applicants respectfully submit that Wick does not address a surge of an active ingredient upon breakdown of the polymer layer. Specifically, Wick relates to the controlled release of an active agent to the skin. (Wick at col. 6, lines 41-44).

Wick provides, according to figure 1, a backing layer 16, an adhesive layer 18, a matrix carrier layer 12, an adhesive layer 14 and a removable protective layer 20. As described in the abstract, the active agent is melt-blended with a thermoplastic matrix polymer, wherein the active ingredient must be heat stable at the melt temperature of the matrix polymer. Examples of matrix polymers are given at column 18, line 62 to column 19, line 13. Wick mentions heat-resistant liquid carriers suitable for melt-blending with polymers and which include polyethyleneglycols, polypropyleneglycols, polyetherpolyols and the like. (Wick at col. 21, lines 31-37). However, the heat-resistant liquid carriers in Wick are substantially different than the water-soluble polymers of the claimed transdermal system. Specifically, the breakdown of the water-soluble polymers of the claimed transdermal system provide a surge of the active ingredient whereas the thermoplastic matrix polymers in Wick are formed through a melt-blend of the active agent with the thermoplastic polymer to form a stable structure to provide a controlled release.

Further, the present invention provides an optional active ingredient contained in an adhesive layer. (Claim 1). This adhesive layer can be a pressure-sensitive adhesive layer (Claim 12). An example of a pressure-sensitive adhesive is mentioned in example 1.1, on page 12 as Duro-Tak 2070. Duro-Tak adhesives are also listed in Wick. (Wick at col. 17, line 37). However, the optional active ingredient layer of the present invention is formed by polymer molecules that are more mobile than the thermoplastic polymer of Wick. The optional active ingredient layer of the present invention allows water from the skin to permeate the layer of the claimed transdermal system containing the optional active ingredient dissolving the water-soluble polymers and to breakdown the structure of the transdermal system. In contrast, the adhesive layer in Wick provides for a controlled release of active ingredient. Thus, Wick does

not disclose, teach or suggest a surge of an active ingredient upon a breakdown of the polymer layer and provides no expectation of success for the instantly claimed invention.

Claim 32 was rejected under 35 U.S.C. § 103(a) as being unpatentable WO '172 and WO'959 in view of Place et al., U.S. Patent No. 5,242,391. The Place patent is relied upon solely to meet the present invention' s active ingredient limitation. However, since dependent claim 32 inherits the limitations of independent claim 1, the rejection based on the additional reference to Place should be withdrawn in view of the foregoing discussion.

None of the cited references discloses, suggests or motivates a skilled artisan to a use a transdermal system wherein at least one active ingredient is adapted to be delivered in a surge upon the breakdown of the polymer layer.

Consequently, WO 95/24172, WO 89/07959, U.S. Patent No. 5,679,373, and U.S. Patent No. 5,242,391, either individually or in any combination, fail to teach or suggest the present invention; and, reconsideration and withdrawal of the Section 103(a) rejections are believed to be in order and such action is respectfully requested.

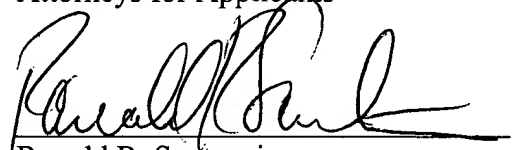
As this paper is being submitted within the three-month term for reply set by the April 9, 2003 Office Action, no fee is believed to be due. In the event, however, a fee is required for the consideration of this paper, the Assistant Commissioner is authorized to charge such fee, or credit any overpayment, to Deposit Account 50-0320.

CONCLUSION

In view of the remarks and amendments herewith and those of record, the application is in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance are earnestly solicited. The undersigned looks forward to hearing favorably from the Examiner at an early date.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP
Attorneys for Applicants

By: 

Ronald R. Santucci
Reg. No. 28,988
Tel (212) 588-0800